

## SEQUENCE LISTING

<110> Republic of Korea represented by the president of Republic of National Fisheries Research and Development Institute

<120> Phytase produced from *Citrobacter braakii*

<130> 3p-02-25

<160> 8

<170> KopatentIn 1.71

<210> 1

<211> 1481

<212> DNA

<213> *Citrobacter braakii* YH-15

<400> 1

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ggaaactgcc cgatggaggg ggataactac tgaaaacggg agctaataacc gcataacgtc 180

gcaagaccaa agagggggac cttcgggcct cttgccatcg gatgtgccca gatgggatta 240

gctagtaggt gggtaacgg ctcacctagg cgacgatccc tagctggtct gagaggatga 300

ccagccacac tggaactgag acacggtcca gactctacg ggaggcagca gtgggaaata 360

ttgcacaatg ggcgaagcc tgcacgcagcc atgcccgcgtg tatgaagaag gccttcgggt 420

tgtaaagtac ttccagcgag gaggaaggtg ttgtggtaa taaccgcagc aattgacgtt 480

actcgcagaa gaagcaccgg ctaactccgt gccagcagcc gcggtaatac ggagggtgca 540

agcgttaatc ggaattactg ggcgttaaaggc gcacgcaggc ggtctgtcaa gtcggatgtg 600

aaatccccgg gctcaacctg ggaactgcac ccgaaactgg caggctagag tctttagag 660

ggggtagaa ttccaggtgt agcggtaaaa tgcgttagaga tctggaggaa taccgggtggc 720

gaaggcggcc ccctggacaa agactgacgc tcaggtgcga aagcgtgggg agcaaacagg 780

attagataacc ctggtagtcc acgcccgtaaa cgatgtcgac ttggagggtt tgcccttgag 840

gcgtggcttc cggagctaac gcgttaagtc gaccgcctgg ggagtacggc cgcaaggta 900

aaactcaaat gaattgacgg gggccgcac aagcggtgga gcatgtggtt taattcgatg 960

caacgcgaag aaccttacct actcttgaca tccagagaac ttagcagaga tgctttggtg 1020

ccttcgggaa ctctgagaca ggtgctgcac ggctgtcgac agctcgtgtt gtgaaatgtt 1080

gggttaagtc cgcgaacgag cgcaaccctt atcctttgtt gccagcgggtt cggncgggaa 1140

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<210> 2  
<211> 10  
<212> PRT  
<213> *Citrobacter braakii* YH-15

<400> 2  
Glu Glu Gln Asn Gly Met Lys Leu Glu Arg  
1 5 10

<210> 3  
<211> 12  
<212> PRT  
<213> *Escherichia coli*

<400> 3  
Ser Glu Pro Glu Leu Lys Leu Glu Asn Ala Val Val  
1 5 10

<210> 4  
<211> 15  
<212> PRT  
<213> *Aspergillus ficuum*

<400> 4  
Phe Ser Tyr Gly Ala Ala Ile Pro Gln Ser Thr Gln Glu Lys Gln  
1 5 10 15

<210> 5  
<211> 15  
<212> PRT  
<213> *Bacillus* sp.

<400> 5  
Ser Asp Pro Tyr His Phe Thr Val Asn Ala Ala Xaa Glu Thr Glu  
1 5 10 15

<210> 6  
<211> 1302  
<212> DNA  
<213> *Citrobacter braakii* YH-15

<220>  
 <221> gene  
 <222> (-1)..(1302)  
 <223> phytase gene

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 gtaagagcac ctacgaagtt cactccaata atgaaagatg tcacacccga ccaatggcca 180  
 caatggatg tgccgttagg atggctaacg cctcgtgggg gagaacttgt ttctgaatta 240  
 ggtcagtatac aacgtttatg gttcacaagg aaaggctgt tgaataatca aacgtgccc 300  
 tctccagggc aggttgcgtt tattgcagac acggatcaac gcacccgtaa aacgggttag 360  
 gcgtttctgg ctgggttagc accaaaatgt caaattcaag tgcattatca gaaggatgaa 420  
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 gaaaaagaat ggagagatit gttaagtctg cataacgctc agtttgcattt tttgcaaaga 840  
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 ttgacaaatg gtacaacaga aaacaggat ggcataaaat taccgtatc tctgttgcattt 960  
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 ctgcccgtc aaccgataa taccctcct ggtggggagc ttgtattcga aaagtggaaa 1080  
 agaaccagtg ataatacggta ttgggttcag gtttcatttg tttatcagac gctgagagat 1140  
 atgaggata ttcaaccgtt gtcgttagaa aaacctgctg gaaaagttga tttaaaattta 1200  
 attgcattgt aagagaaaaaa tagtcaggaa atgtgttcgt taaaaagttt ttccaggctc 1260  
 attaaggaaa ttgcgtgcc agagtgtgca gttacggaaat aa 1302

<210> 7  
 <211> 433  
 <212> PRT  
 <213> *Citrobacter braakii* YH-15

<220>  
 <221> PEPTIDE

<222> (1)...(433)

<223> phytase

<400> 7

Met Ser Thr Phe Ile Ile Arg Leu Leu Ile Phe Ser Leu Leu Cys Gly  
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Ser Phe Ser Ile His Ala Glu Glu Gln Asn Gly Met Lys Leu Glu Arg  
20 25 30

Val Val Ile Val Ser Arg His Gly Val Arg Ala Pro Thr Lys Phe Thr  
35 40 45

Pro Ile Met Lys Asp Val Thr Pro Asp Gln Trp Pro Gln Trp Asp Val  
50 55 60

Pro Leu Gly Trp Leu Thr Pro Arg Gly Gly Glu Leu Val Ser Glu Leu  
65 70 75 80

Gly Gln Tyr Gln Arg Leu Trp Phe Thr Ser Lys Gly Leu Leu Asn Asn  
85 90 95

Gln Thr Cys Pro Ser Pro Gly Gln Val Ala Val Ile Ala Asp Thr Asp  
100 105 110

Gln Arg Thr Arg Lys Thr Gly Glu Ala Phe Leu Ala Gly Leu Ala Pro  
115 120 125

Lys Cys Gln Ile Gln Val His Tyr Gln Lys Asp Glu Glu Lys Asn Asp  
130 135 140

Pro Leu Phe Asn Pro Val Lys Met Gly Lys Cys Ser Phe Asn Thr Leu  
145 150 155 160

Lys Val Lys Asn Ala Ile Leu Glu Arg Ala Gly Gly Asn Ile Glu Leu  
165 170 175

Tyr Thr Gln Arg Tyr Gln Ser Ser Phe Arg Thr Leu Glu Asn Val Leu  
180 185 190

Asn Phe Ser Gln Ser Glu Thr Cys Lys Thr Thr Glu Lys Ser Thr Lys  
195 200 205

Cys Thr Leu Pro Glu Ala Leu Pro Ser Glu Phe Lys Val Thr Pro Asp  
210 215 220

Asn Val Ser Leu Pro Gly Ala Trp Ser Leu Ser Ser Thr Leu Thr Glu  
225 230 235 240

Ile Phe Leu Leu Gln Glu Ala Gln Gly Met Pro Gln Val Ala Trp Gly  
245 250 255

Arg Ile Thr Gly Glu Lys Glu Trp Arg Asp Leu Leu Ser Leu His Asn  
260 265 270

Ala Gln Phe Asp Leu Leu Gln Arg Thr Pro Glu Val Ala Arg Ser Arg  
275 280 285

Ala Thr Pro Leu Leu Asp Met Ile Asp Thr Ala Leu Leu Thr Asn Gly  
290 295 300

Thr Thr Glu Asn Arg Tyr Gly Ile Lys Leu Pro Val Ser Leu Leu Phe  
305 310 315 320

Ile Ala Gly His Asp Thr Asn Leu Ala Asn Leu Ser Gly Ala Leu Asp  
325 330 335

Leu Lys Trp Ser Leu Pro Gly Gln Pro Asp Asn Thr Pro Pro Gly Gly  
340 345 350

Glu Leu Val Phe Glu Lys Trp Lys Arg Thr Ser Asp Asn Thr Asp Trp  
355 360 365

Val Gln Val Ser Phe Val Tyr Gln Thr Leu Arg Asp Met Arg Asp Ile  
370 375 380

Gln Pro Leu Ser Leu Glu Lys Pro Ala Gly Lys Val Asp Leu Lys Leu  
385 390 395 400

Ile Ala Cys Glu Glu Lys Asn Ser Gln Gly Met Cys Ser Leu Lys Ser  
405 410 415

Phe Ser Arg Leu Ile Lys Glu Ile Arg Val Pro Glu Cys Ala Val Thr  
420 425 430

Glu

<210> 8  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer for the detection of phytase gene

<400> 8  
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30